AASHTO-AGC-ARTBA Joint Committee

Subcommittee On New Highway Materials and Technologies

2004

Summary Report

NOTICE

AASHTO-AGC-ARTBA

JOINT COMMITTEE

AASHTO-AGC-ARTBA

FHWA

SUBCOMMITTEE ON NEW HIGHWAY
MATERIALS AND TECHNOLOGIES

SUMMARY REPORT

2004

AASHTO-AGC-ARTBA
JOINT COMMITTEE

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SUMMARY REPORT
AUGUST 2004

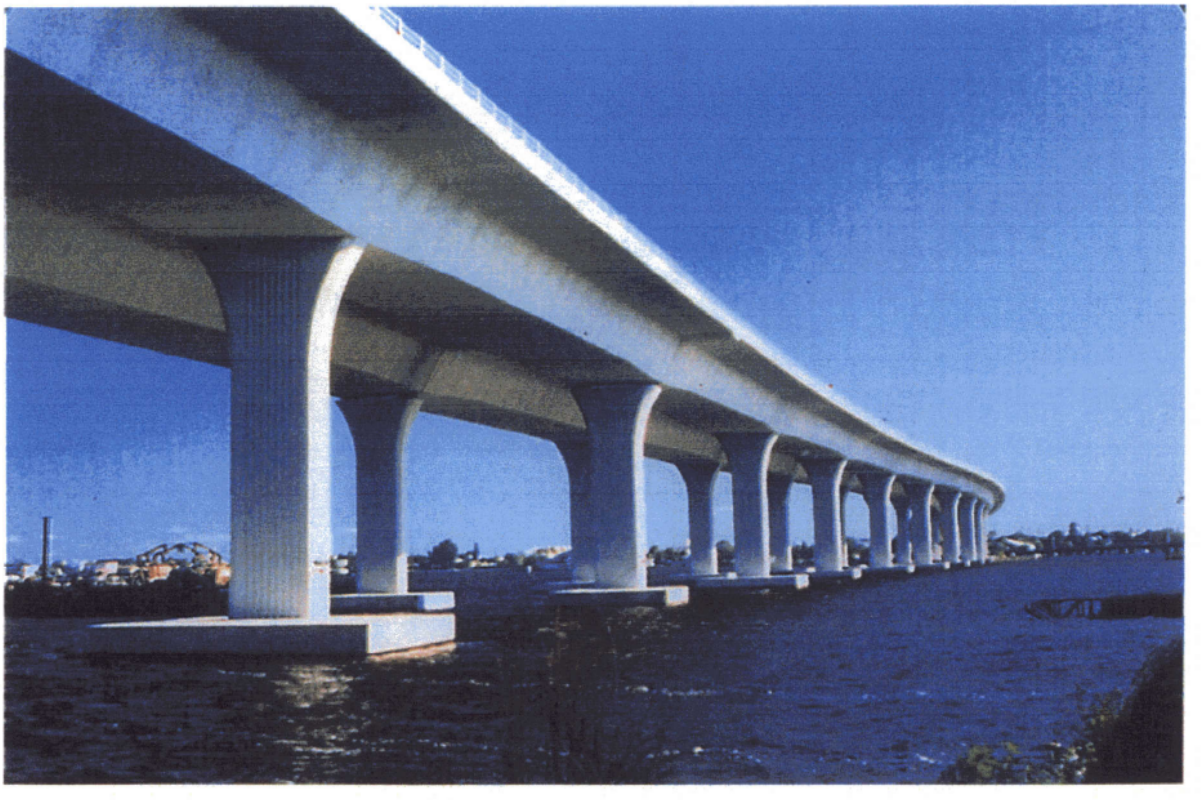
AASHTO-AGC-ARTBA

JOINT COMMITTEE

ANNUAL EXECUTIVE SESSION

Galloway, New Jersey

August 2004



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AASHTO-AGC-ARTBA
Joint Committee

- Scope -

To identify the needs and types of new highway materials and technologies required and to provide the appraisal, evaluation, and specification development for new materials and technologies being proposed for the highway industry.

- Purpose -

The subcommittee through the various task forces provides the liaison between industry and the highway program for the development of new materials and technologies to meet the highway program needs, through the testing grounds of the State highway departments, and provides industry with identification and need for the development of new materials and technologies to meet the needs of the highway organizations.

- History and Mission -

A Joint Committee was established between the American Association of State Highway and Transportation Officials (AASHTO) and the Associated General Contractors of America (AGC) in 1921. It was formed to consider matters of mutual interest and concern to State highway officials and contractors, and to provide a forum for cooperative resolution of highway construction problems.

In 1972, a merger was approved uniting AASHTO's Joint Committees with the AGC and the American Road and Transportation Builders Association (ARTBA). This merger created the present AASHTO-AGC-ARTBA Joint Committee.

Each participating agency selects a co-chairman and a co-secretary to represent their organization on the Joint Committee. The Joint Committee follows a format adopted in 1961 in which the co-chairmen, after receiving comments and suggestions from members of their organizations, establish an annual agenda of several subjects of current interest and significance. Following year long discussions at the meetings of the four regional associations of State highway and transportation officials, the Joint Committee, meeting in executive session, develops official recommendations that are then sent to the member organizations for adoption and implementation.

- Joint Committee Functions -

A. To provide harmonious relations between State highway and transportation officials and highway contractors that are in the public interest;

B. To discuss jointly those matters which relate to or affect the actual construction of highways. To this end the Joint Committee is responsible for considering any matters of general interest and application that affect both contractors and State highway officials; and

C. To promote an increased scope of joint cooperative activities between State highway departments and highway contractors at the State level.

Since the merger with ARTBA, the Joint Committee also discusses jointly the development, use, and application techniques of highway equipment and materials. It carries on a technical program to increase communication and dialogue between State highway departments and the highway equipment and materials industry so that consideration may be given to new products and the industry may learn of State highway department needs.

To assist the Joint Committee in this effort, special Subcommittees are created to address specific subject areas. Additionally, depending upon the complexity of the subject area, the Subcommittees may be further subdivided into a number of Task Forces.

- Subcommittee on New Highway Materials and Technologies

The mission of the Subcommittee on New Highway Materials and Technologies is to develop guide specifications for new materials and technologies identified for use in highway construction projects. It provides a much needed forum for industry to express their views and concerns relative to the use of new products and to participate in the development of consensus guide specifications that are used by highway and transportation agencies to address the incorporation of these new materials and technologies into construction contracts.

The work of the Subcommittee is accomplished through the use of Task Forces that are created to address the particular items identified. Membership of the Subcommittee consists of three co-chairmen, a representative from each member organization, and a secretary from the Federal Highway Administration. Membership of the Task Forces consists of a chairman, a secretary and representatives from the member organizations interested in participating in the work of the Task Force. Persons with needed expertise in the subject being addressed but who are not members of the member organizations are sometimes asked to participate when deemed appropriate and necessary.

- Members -

Co-Chairman: Paul T. Wells (AASHTO)

Assistant Commissioner and Chief Engineer
New York State Department of Transportation
State Campus Building 5
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Co-Chairman: Cork Peterson (AGC)

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Co-Chairman: Arthur M. Dinitz (ARTBA)

President
Transpo Industries, Inc
20 Jones Street
New Rochelle, NY 10801
Ph. 914-636-1000

Secretary: Tommy L. Beatty (FHWA)

Director
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Federal Highway Administration
400 Seventh Street, S.W.
Room 3118, HIPT
Washington, D.C. 20590
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- Status of Task Forces -

Currently active Task Forces under the Subcommittee of New Highway Materials and Technologies:

Task Force 13, *Standardization of Details for Bridge and Road Hardware*

Task Force 44, *Electronic Information Technology Applications*

Task Force 45, *Protocols, Procedures, and Technology for Asset Management Condition Data Collection*

Forty-two task forces have been disbanded (Nos. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10,11, 12, 14,15,16,17,18,19,20,21,22,23,24,25,26,27,28,29,30,31,32,33,34,35,36, 37, 38, 39, 40, 41, 42, and 43).

Active Task Forces

Task Force 13

Standardization of Details for Bridge and Road Hardware

Patrick Collins (Co-Chair)
Ph. 307-777-4484

John Durkos (Co-Chair)
Ph. 330-346-0721

Nick Artimovich (Secertary)

Jim McDonnell (ex-officio AASHTO Representative)

Exectutive Board Members

Dean Alberson
Andy Artar
Nancy Berry
Roger Bligh
Mark Bloschock
Arthur Dinitz
Ron Faller
Paul Fossier
Rick Foster
Greg Fredrick
John LaTurner
Matt Leahy
Will Longstreet
Clarence Mabin
Rick Mauer
Adam Neuwald
Mike Stenko
Barry Stephens
BobTakach

Objective: *Recommend standards for bridge and road hardware to ensure optimum characteristics, aesthetics, and economy.*

Prior Accomplishments:

- *In1972,* ***"A Guide to Standardized Highway Barrier Rail Hardware"*** *was developed, published and 1700 copies distributed.*
- *In 1973,* ***"A Supplement to a Guide to Standardized Highway Barrier Rail Hardware"*** *was developed, published and 1500 copies distributed.*
- *In 1979,* ***"A Guide to Standardized Highway Barrier Rail Hardware"*** *was revised, consolidated, republished and distributed.*
- *In 1980,* ***"A Guide to Standardized Highway Lighting Pole Hardware"*** *was developed, published and distributed.*
- *In 1986,* ***"A Guide to Standardized Highway Drainage Products," was*** *developed, published and distributed.*
- *Initiated Drainage Structure Castings and Steel Anchor Bolts material specifications that were subsequently adopted by AASHTO.*
- *In 1990,* ***"Work Zone Barrier Supplement to A Guide to Standardized Highway Rail Hardware"*** *was published.*

- *In 1995, **"A Guide to Standardized Highway Barrier Hardware,"** which replaced the 1979 guide of the same title and the 1990 work zone barrier supplement, was published and distributed. CAD and text files for the guide are available at:*
  http://www.ccad.uiowa.edu/ mhray/hardware.html

- *The Task Force met in October 1995 in Sturbridge, Massachusetts, and in March 1996 in San Antonio, Texas.*

- ***"A Guide to Standardized Highway Drainage Products"** was marked up to show needed updates and has been turned over to an NCHRP contractor for redrafting and metrication.*

- *The Task Force is seeking resources to complete the following, including conversion to metric dimensioning:*

  - *An update to **"A Guide to Standardized Highway Lighting Pole Hardware. "***

  - *A Guide for traffic signal support hardware.*

- ***"A Guide to Small Sign Support Hardware",** prepared by the Task Force was approved for publication in 1994. However, because the guide was prepared using customary US units, its publication has been postponed until it can be metricated. The NCHRP is aiding the Task Force by contracting to have the guide metricated and converted to CAD drawings.*

- *The update of **"A Guide to Standardized Highway Drainage Products"** has been approved for publication. The Task Force members are in the process of developing a camera-ready copy to give to AASHTO for publication.*

- *The document, **"A Guide to Small Sign Support Hardware"** was published by AASHTO.*

- *In 1999, **"Guide to Standardized Highway Drainage Products" was** published by AASHTO.*

- *Implement subcommittee structure to focus on the details of the various hardware guides.*

Activity Since Last Report

Since the last report, Task Force 13 has met in New Orleans, Louisiana on September 22 and 23, 2003 and in Washington D.C. on April22 and 23, 2004. The New Orleans meeting was held in conjunction with the AASHTO Technical Committee on Roadside Safety, while the Washington meeting was held on the campus of the George Washington University with a field trip to view a crash test at the Federal Outdoor Impact Laboratory. There were approximately 80 attendees at both meetings.

During the Spring 2004 meeting, significant progress was made towards publishing the Task Force Guides. With direct participation from AASHTO headquarters, we were able to resolve numerous issues and will now proceed to post the Task Force web site. It will initially be hosted by Texas Transportation Institute. Funding for the updating of two to three of the Guides will be sought from the AASHTO Standing Committee on Highways through NCHRP 20-7.

Most subcommittees continue to work on updates to their guides, notably the Guide to Standardized Highway Barrier Hardware, The Guide to Luminaire Support Hardware and The Guide to Small Sign Supports along with the new guides to Bridgerail and Transition Hardware and Railroad-Highway Crossing Hardware Contacts. Initial review of the Drainage Products Guide has begun and coordination with the National Work Zone Safety Information Clearinghouse will continue. Inter-Laboratory Comparisons of crash data will continue in anticipation of FHWA's requirement for Laboratory Certification.

Coordination between other highway organizations has increased. At the Spring 2004 meeting, there were presentations an/or discussions with members of AASHTO, AGC, ARTBA, ATSSA, and the National Association of County Engineers.

Task Force at Texas Transportation Institute

College Station – Spring 2003

Task Force 44

Electronic (Internet) Bidding

Objective: *To develop guide specifications and possible standardization of electronic (Internet) bidding. The Task Force will also facilitate the construction industry's move to systems and procedures for electronic/internet information technology.*

Arthur Dinitz, chairman and CEO of Transpo Industries, will be the acting chairman until the Task Force is established. Task Force 44 is still in development. AASHTO was contacted to enlist help in finding an AASHTO State DOT person to chair the Task Force.

Activity Since Last Report:

- *State DOT, industry suppliers, and contractors have been contacted in an effort to establish the membership.*
- *The Task Force anticipates establishing its membership in the next 6 months.*

Task Force 45

Protocols, Procedures, and Technology for Asset Management Condition Data Collection

Douglas R. Rose (Chairman)
Ph. 410-545-0360 (1-888-204-0132)
Roemer Alfelor
(Secretary through 5/31/04)
Carl Bertrand
Robert C. Briggs
Ken Fults
Paul Harbin
Steve Karamihas
Bob Lanham
Charles Larson
Samuel R. Miller, Jr.
Omar Smadi
Peter Stephanos

Objective: *To advance the state-of-the-art of condition surveys and data collection for Asset Management.*

Activity Since Last Report:

- *The Task Force met at the 2003 TRB Conference in Washington, DC where the need for an Asset Management Data Collection (AMDC) Guide was reiterated.*
- *On July 2003, a contact/project was initiated with the Virginia Department of Transportation (VDOT) to develop an AMDC Guide.*
- *The project panel for the AMDC Guide was formed consisting of Peter Stephanos (Panel Chair) and John Andrews from MDSHA; Chuck Larson and Rob Hanson from VDOT; Roemer Alfelor, Frank Botelho, and Loenzo Casanova from FHWA; Sam Miller from ACPA; and Paul Harbin from Roadway Group. Frank Botelho retired from FHWA in late 2003 and was replaced by Roemer Alfelor as Task Force 45 Secretary.*
- *The project kicked off in August 2003 during which a project charter was developed including target milestones. In November 2003, the panel met again to review existing literature on data collection and finalize the outline for the guide.*
- *A Task Force meeting at the 2004 TRB Conference was planned but cancelled due to schedule conflicts.*
- *Work accomplished to date by the project team at VDOT includes completing the literature review, synthesizing data and writing the first four chapters of the guide.*

SUMMARY OF PAST

TASK FORCE

ACCOMPLISHMENTS

Task Force 1

Epoxy Resins

Objective: *Provide epoxy material specifications that meet service requirements for highway construction.*

Action: *Specifications were completed by Task Force and forwarded to AASHTO Operating Materials Committee (1963). Specifications were included as a standard item in AASHTO Publication (1964). With its mission accomplished, the Task Force was dissolved.*

Task Force 2

Hot Dip Galvanizing Steel

Objective: *Provide specifications criteria that covers coatings for products fabricated from steel shapes.*

Action: *Task Force work completed and forwarded to AASHTO Operating Materials Committee for consideration as standard specifications (latter part of 1968). Specifications included in AASHTO publication of 1974. With its mission accomplished, the Task Force was dissolved.*

Task Force 3

Aluminum Culvert Pipe

Objective: *Provide specifications criteria for corrugated aluminum alloy page for use as culverts and under drains in highway construction.*

Action: *Task Force completed assignment and specifications were forwarded to AASHTO Operating Materials Committee June 1962. AASHTO approved the specifications in October 1962. Presently designated as AASHTO-M-197-74. With its mission accomplished, the Task Force was dissolved.*

Task Force 4

Protective Coatings for Concrete Bridge Decks

Objective: *Develop guide specifications for protective coatings for concrete bridge decks (1962).*

Action: *Task Force was placed within Subcommittee on Bridge Deck Improvements and Durability (August 1971).*

Task Force 5

Mineral Fillers in Asphalt Paving Mixtures

Objective: *Consider the problem of mineral fillers in asphalt paving mixtures and develop specifications accordingly.*

Action: *Since mineral fillers in asphalt paving mixtures are largely a local problem (differences in types of materials available), the Joint Committee decided to dissolve this Task Force (August 1965).*

Task Force 6

Joint Sealers for Concrete Pavements and Concrete Bridge Decks

Objective: *Develop specifications regarding joint seal materials for pavements and bridge decks.*

Action: *Task Force was placed within Subcommittee on Bridge Deck Improvements and Durability (1970).*

Task Force 7

Reflective Sheeting and Coatings for Signs

Objective: *Develop specifications for reflective sheeting, sign coatings, reflective paints, and button units.*

Action: "Specifications for Glass Bead Reflectorized Coatings for Highway Signs" *were developed by the Task Force and forwarded to the Joint Committee for review by the AASHTO Operating Materials Committee (1977).*

"Specification for Acrylic Prismatic Reflectors Used in Cutout Letters Symbols and Accessories" *were developed by the Task Force and forwarded to the Joint Committee for review and approval by the AASHTO Operating Materials Committee for (1972).*

"Guide Specifications-Sheet Reflective Materials Enclosed Lens for Traffic Control Signs" *were developed by the Task Force and forwarded to the Joint Committee for review by the AASHTO Operating Materials Committee. The requirements were included in AASHTO M-268-77I titled* ***"Sheet Reflective Materials for Traffic Control Devices. "***

"Guide Specifications-Sheet Reflective Materials Encapsulate Lens for Traffic Control Signs" *were developed by the Task Force and forwarded to the Joint Committee for review by the AASHTO Operating Materials Committee (1974). With its mission accomplished, the Task Force was dissolved (September 1974).*

Task Force 8

Coating for Pavement Dowels

Objective: *Develop specifications for low cost dowel coatings that are effective in preventing corrosion and dowel seizures.*

Action: *Specifications for low cost dowel coatings were completed by the Task Force and forwarded to the AASHTO Operating Materials Committee (1972). Included as AASHTO Interim Specification - spring 1975. With its mission accomplished, the Task Force was dissolved.*

Task Force 9

Materials for Insulation Under Concrete Slabs for Frost Penetration Control

Objective: *Develop specifications for materials to be used, as insulation to be earth pavements to minimize frost penetration in areas of frost-susceptible soils.*

Action: *Specifications by the Task Force were forwarded to the AASHTO Operating Materials Committee in October 1967. Included in AASHTO ..pecifications as M230-70.*

A ***"Performance Study Report on Insulation Board (Polystyrene) "*** *was forwarded to the Joint Committee for acceptance and reproduction (June 19 70). With its mission accomplished, the Task Force was dissolved.*

Task Force 10

Deterioration and Preservation of Concrete Pavements and Bridge Decks

Objective: *Objectives of Task Forces 4 and 6 combined.*

Action: *This Task Force was placed under the Subcommittee on Bridge Deck Improvements and Durability.*

Task Force 11

Simplification of Gradation of Aggregates

Objective: *Review fieldwork and recommend specifications for a series of aggregate gradations that will limit the number in effect and meet the needs for highway and bridge construction.*

Action: *Specifications recommendations by the Task Force were accepted by the Joint Committee regarding coarse and fine aggregate gradations as well as the number of coarse aggregates to be specified for concrete mixes (August 1970). Included in AASHTO specifications as M29-70 respectively. With its mission accomplished, the Task Force was dissolved.*

Task Force 12

Surfacing for Orthotropic Bridge Decks

Objective: *Prepare recommend specifications for surfacing of Orthotropic bridge decks.*

Action: *Task Force was dissolved due to inactivity.*

Task Force 14

Development and Promotion of Rapid Sampling and Testing Equipment and Methods

Objective: *Develop and promote rapid sampling and testing equipment and methods for highway materials.*

Action: *In 1973, the Task Force developed a questionnaire for transmittal to State highway organizations and industry. The questionnaire was designed to provide answers to five questions on rapid test needs in the areas of aggregates, plastic portland cement concrete, hardened portland cement concrete, bituminous concrete mixes, and soil. Several copies of the summary were sent to industry representatives and the State highway departments in 1974.*

In 1975, the Task Force referred a number of test procedures to AASHTO and ASTM for consideration by the appropriate technical sections following a screening. Included in the tests were 14 of the RT

Other test procedures referred to AASHTO and ASTM were:

1. *Four concrete strength tests*
2. *Indiana's aggregate washing procedures*
3. *Nuclear density test*
4. *Specific gravity of bituminous mixtures*
5. *Vacuum extraction test for asphalt*

In 1989, The Task Force completed and approved the revised final slide presentation on rapid sampling and testing equipment and procedures. With its mission accomplished, the Task Force was dissolved in January 1992.

Task Force 15

Development of Specifications for Securing More Skid-Resistant Pavements

Objective: *Develop specifications for securing more skid-resistant pavements.*

Action: *Specifications, prepared by both portland cement concrete pavement group and the bituminous pavement group, were referred to the appropriate AASHTO Operating Materials Committee. With its mission accomplished, the Task Force was dissolved.*

Task Force 16

Development of Ways to Use Waste Products in Highways

Objective: *Determine which waste materials are suitable to use as replacements for highway aggregates and fill material.*

Action: *This Task Force developed a report entitled* ***"Ways to Use Waste Products in Highway Construction "*** *which was approved for publication by the Joint Committee at the 1977 meeting and published by AGC in 1978. With its mission accomplished, the Task Force was dissolved.*

Task Force 17

Storm Water Management

Objective: *Recommend criteria for drainage systems that dispose of storm water runoff in porous soil strata.*

Action: *A design document,* ***"Underground Disposal of Storm Water Runoff, "*** *was published in February 1980. With its mission accomplished, the Task Force was dissolved.*

Task Force 18

Applicability of Performance Specifications to Present Construction Practice

Objective: *Study and develop guidelines for performance specifications and quality control procedures, where possible, in construction specifications.*

Action: *The Joint Committee discussed The Performance Specification Guidelines developed by the Task Force and the Committee moved that the report be published. With its mission accomplished, the Task Force was dissolved.*

Task Force 19

Guidelines for Value Engineering and Material Alternates

Objective: *Develop guidelines for value engineering and material alternates by defining the value engineering system and procedures for application of value engineering.*

Action: *A publication entitled* ***"Guidelines for Value Engineering"*** *was approved by the Joint Committee at the 1977 meeting and later published by ARTBA in 1978. With its mission accomplished, the Task Force was dissolved.*

Task Force 20

Development of Generic Specifications for Patching Materials Used in the Rapid Repair of Portland Cement Concrete

Objective: *Develop generic specifications for patching materials used in the rapid repair of portland cement concrete.*

Action: *During the early work of this Task Force, ASTM was drafting and balloting a standard specification in the same area. The ASTM specification was drafted, affirmatively balloted, and published. The Task Force arranged for the States of Louisiana, Pennsylvania, Oklahoma, Illinois, and Virginia to evaluate ASTM Standard Specification C928-80;* ***"Packaged, Dry, Rapid Hardening Cementitious Materials for Concrete Repairs."*** *The specification was evaluated by testing commonly used patching material in accordance with ASTM tests and*

procedures and then comparing the results with historical performance data. The test methods contained in ASTM C928 could not be totally complied with by all of the evaluating State laboratories in this multi-State evaluation. Some State testing laboratories did not possess the appropriate equipment for the testing of all specification requirements.

Any party interested in rapid-set patching material can use the ASTM Specification as a specification guide. Although these specifications are not considered to be performance-predicting specifications, they do identify properties of rapid-set patching material and reasonably classes these properties. Since no better state-of-the-art or state-of-the-practice specifications for the identification of rapid-set patching material existed, the Task Force was dissolved in 1984.

Task Force 21

Development of Generic Specifications for Highway Pavement Markings

Objective: *Develop generic specifications for pavement marking products.*

Action: *After encountering considerable difficulty in securing a new chairman, the Secretary of Task Force No. 21 sent a letter to members of the Task Force and to members of the AASHTO Highway Subcommittee on Traffic Engineering to seek their advice on whether or not the Task Force should be maintained or terminated. All of the Task Force members responded. Two were for keeping the Task Force; the third, termination. Of the 50 States, 32 responded and only 3 felt that the Task Force should be kept. Most States indicated that they had their own specifications and did not need, nor would likely use, the specifications proposed. Four State responders suggested leaving it up to the ITE since it had developed some specifications already.*

Based on the lack of interest from the Task Force members and the overwhelming opposition from the AASHTO traffic engineers, the Task Force was dissolved in 1982.

Task Force 22

Development of a Cross-Reference for Materials and Specifications for Waterways, Airports, Railroads, Transit, and Highway Projects

Objective: *Develop a set of standard requirements for materials used in the construction of waterways, airports, railroads, transit, and highways other than for building construction and track work.*

Action: *This Task Force developed recommendations to reduce the variety of requirements for materials common to the various modes and find ways to see if more uniformity could be obtained. Recommendations for revision of AASHTO T-245 and T-246 to be complete bituminous mixture design procedures; including all satellite procedures (e.g. specific gravity of the aggregates and the compaction mixtures) as well as inclusion of all computations needed for complete design (e.g. air voids filled with asphalt and voids in mineral aggregates, etc.) were made by the Task Force.*

For bituminous mixture design, the Task Force recommended that the design procedures should include criteria for various highway loadings (preferably based on equivalent daily 18-kip axle loads used in the AASHTO Interim Pavement Design Guide) and various airport loadings (preferably based on the tire pressure concept used by the U.S.A. Corps of Engineers). The Task Force recommended that specifications for pavement compaction (density) for all of these various loadings be developed.

The Task Force noted no substantial specification difference in cement for the different modes of transportation.

The Task Force recommended that standard coarse aggregate sizes for Portland Cement Concrete Pavements (PCCP) be promoted through the AASHTO Executive Committee as presented in AASHTO M-43. The Task Force recommended that agencies review and reevaluate their present requirements for friable particles in PCCP aggregates. The Task Force urged that agencies adopt as many requirements of AASHTO M-6 as possible with appropriate modifications as necessary to address local conditions.

The Task Force developed a report entitled, ***"Report on Drainage Pipe, "*** *in September 1988. It was approved by mail ballot for publication by the AASHTO AGC ARTBA Joint Committee in 1989. With its mission accomplished, the Task Force was dissolved.*

Task Force 23

Development of Materials Specifications and Procedures for the 3-R Rehabilitation of Portland Cement Concrete Pavements

Objectives: *Identify, evaluate, and categorize procedures and related material specifications currently in use by agencies in the rehabilitation of portland cement concrete pavements. Develop guide specifications for the rehabilitation of portland cement concrete pavements.*

Action: *The following specifications were developed and mailed to each Task Force member for ballot in August 1983. Members were given the opportunity to accept or reject each specification as written:*

- ***1*** *Concrete Pavement Jacking*
- ***2*** *Subsealing and Stabilization*
- ***3*** *Joints and Crack Repairs*
  - ***3.02*** *Liquid Sealants*
  - ***3.03*** *Neoprene Compression Seals*
  - ***3.04*** *Silicone Sealants*
  - ***3.05*** *Cracks*
- ***4*** *Patching*
  - ***4.01*** *Partial Depth Patching*
  - ***4.02*** *Full-Depth Patching*
- ***5*** *Grooving*
- ***6*** *Grinding*
- ***7*** *Milling*
- ***8*** *PCC Bonded Overlays*
- ***9*** *PCC Unbonded Overlays*
- ***10*** *PCC Direct (Partially) Bonded Overlays*

The revised specifications (designated as "Guide Procedures") were forwarded to the Chairman of the AASHTO Task Force in May for AASHTO clearance. Clearance by AASHTO through the AASHTO Subcommittee on Construction acting for the Executive Committee took place in July 1985. The final document was printed and distributed to the Joint Committee, all FHWA offices and State highway agencies. Between 1986 and 1988, Task Force members proposed minor revisions to the published Guide Procedures, and the revised text was reviewed by the Task Force membership. The Task Force forwarded these minor revisions and revised text to AASHTO for consideration in their guide specifications for highway construction.

Based on the substantial completion of the Task Force's objectives, the Task Force was dissolved in September 1988.

Task Force 24

Development of Materials and Process Specifications for the Recycling of Asphalt Pavements

Objectives: *Identify, review, and evaluate the materials and processes utilized by transportation agencies in the recycling of asphalt pavements. Catalog materials and processes, and their suitability. Identify materials and process research and specification development needs. Participate and cooperate in the development and presentation of seminars on asphalt recycling.*

Action: *The AASHTO-AGC-ARTBA Joint Committee directed the Task Force to conduct seminars in locations where there existed a need to further the use of asphalt pavement recycling.*

This Task Force, in cooperation with the Demonstration Projects Division of the Federal Highway Administration, developed and sponsored a nationwide series of seminars on asphalt pavement recycling. Seminars were conducted in Rhode Island, Pennsylvania, North Carolina, Louisiana, Kansas, and Colorado, with approximately 900 participants representing Federal, State, county, and city governments; consultants; contractors; equipment manufacturers; and other interested individuals in attendance. The seminars utilized a combination of speakers nationally recognized in recycling, and local speakers with recycling experience.

Since asphalt recycling, in one form or another, was standard operating practice in over 40 States, the Task Force was dissolved in 1983.

Task Force 25

Development of Specifications and Laboratory Procedures for Geotextiles Used in Civil Engineering Applications

Objective: *Develop and publish through appropriate forums geotextile specifications and test procedures based on state-of-the-art knowledge.*

Action: *Eight test methods for index properties were adopted for use in the specifications developed by the Task Force. The fabric industry associations in conjunction with ASTM Joint Committee D-35, Geotextiles and Related Products developed test Methods 1-7. Since these procedures were more specific than the ones currently used, and since the use of these procedures were expected to result in a more uniform testing of fabrics, the Task Force recommended that these methods be submitted to AASHTO for adoption. Test Method 8 is unique to the application of paving fabrics. The eight test methods for index properties were provided to the Joint Committee's Subcommittee for New*

Highway Materials and the Materials and Construction subcommittees of AASHTO. All of these test methods were subsequently either replaced by new ASTM standard tests or adopted as an ASTM standard.

Specifications developed by the Task Force were incorporated into FHWA's publication FHWA-HI-90-001, ***"Geotextile Design and Construction Guidelines. "***

A publication entitled ***"Guide Specifications and Test Procedures for Geotextiles"*** *was approved by the Joint Committee at the 1990 meeting and later published by AASHTO. It provided guide specifications for paving fabrics, erosion control, drainage, temporary silt fence, and separation applications. With its mission accomplished, the Task Force was dissolved.*

Task Force 26

Standardization on An Area wide Basis of Specifications for Asphalt Mix Design Criteria and Mixture Gradation

Objective: *Explore the possibility of getting user agencies to agree to common specifications for asphalt mix design criteria and mixture gradation using the following approach:*

1 *Solicit the support and involvement of all affected industry groups*

2. *Identify the potential savings that could result from specifications and asphalt mix design criteria on an area wide basis*

3. *Identify all the aggregate and asphalt mixture producers in three or four potential pilot areas that supply several user agencies*

4. *Select one geographical area for a pilot program to demonstrate the advantages of all agencies using common specifications and mix design procedures; and*

5. *Monitor effect of common specifications and mix design procedures and report results of pilot program to the Joint Committee.*

Action: *The conclusions of the 1982 meeting provided the objectives for:*

- *Determining whether or not common specifications for asphalt concrete, utilized in a given geographical area, would result in economic benefits to all using agencies in that area.*

- *Suggesting that a geographical area be selected for a pilot program to develop and evaluate the effects of common specifications and mix design procedures.*

- *Suggesting that cold feed materials for asphalt concrete should not be controlled by standard specification, but should be left flexible to allow utilization of the most economical local materials that can satisfy quality requirements.*

- *Suggesting that there would be merit in standardizing requirements for mixtures being placed, especially with respect to test methods and acceptance criteria. Asphalt tests pertaining to stripping characteristics also differ widely and are inconclusive as to what merit there would be in standardizing requirements for mixtures being placed, especially with respect to test methods and acceptance criteria. Asphalt tests pertaining to stripping characteristics also differ widely and are inconclusive as to acceptability of both aggregate and asphalt.*

The group was not able to arrive at a consensus as to the desirability of recommending a pilot program. Accordingly, a subcommittee was appointed to gather facts with respect to specifications of the DOT's in Georgia, Alabama, and Tennessee, and to define the areas that prevent materials producers from operating simultaneously for all three States.

It was agreed that subcommittee members discuss the broad topic with members of their individual DOT organizations to obtain opinions on the subject of a pilot program.

It was agreed that members of the FHWA should continue their efforts to upgrade the tabulation on individual agency requirements for asphalted concrete and its component materials.

It was agreed that the FHWA and National Association representatives on the ad hoc group should continue efforts to define areas other than Chattanooga where a regional pilot program could be conducted.

After conferring with their respective DOT's, the members of the Subcommittee all provided negative reports as to the merit and feasibility of standardized area wide specifications. Based on the Task Force's findings, Task Force 26 was dissolved.

Task Force 27

Ground Modification Techniques for Transportation Applications

***Objective**: Define appropriate transportation applications for ground modification techniques and systems, promote and develop improved ground modification techniques, develop practical oriented technical guidelines, and develop specification and contracting procedures.*

***Action:** A publication entitled "In Situ Soil Improvement Techniques" was approved by the Joint Committee at the 1990 meeting and later published by AASHTO. The sections included in this publication include:*

- *Guidelines for the Design of Mechanically Stabilized Earth Walls*
- *Construction Specifications for Mechanically Stabilized Earth Walls*
- *Design Guidelines for Use of Extensible Reinforcements (Geosynthetic) for Mechanically Stabilized Earth Walls in Permanent Applications*
- *Construction Specifications for Permanent Soil Nailed Structures (Design-Build Specifications)*
- *Dynamic Compaction - A Brief Overview*
- *Stone Columns*
- *Wick Drains*
- *Vibro-Compaction*
- *Lime Columns*
- *Ground Improvement Systems in Combination*
- *Permanent Ground Anchor Specifications*
- *Ground Anchor Inspector's Manual*
- *Grouting for Transportation Applications*

With its mission accomplished, the Task Force was dissolved.

Task Force 28

Fly Ash Highway Construction

***Objective:** Develop specifications as appropriate and assemble user package for various applications of fly ash such as Portand cement concrete, lime-fly ash aggregate bases, undersealing, and subgrade stabilization.*

Action: *the Task Force developed the following specifications:*

- *Guidelines for Usage of Pozzolanic Stabilized Mixture (PSM) Base Course or Sub base*
- *Guide Specification for Pozzolanic Stabilized Mixture (PSM) Base Course or Sub base*
- *Guidelines for Use of Fly Ash for In-Place Subgrade Soil Modification*
- *General Contract Specification for Acceptance of Fly Ash by a State Highway Agency*

These guidelines and guide specifications were combined into a report entitled, ***"Guidelines and Guide Specifications for Using Pozzolanic Stabilized Mixture (Base Course or Subbase) and Fly Ash for In Place Subgrade Soil Modification. "*** *It was approved by mail ballot for publication by the AASHTO AGC ARTBA Joint Committee in 1989.With its mission accomplished, the Task Force was dissolved.*

Task Force 29

Cathodic Protection of Reinforced Concrete Bridge Decks

Objective: *Develop standard specifications for cathodic protection of reinforced concrete bridge decks.*

Actions: *At its first meeting in June 1987, Mr. Clear informed the committee members and guests that this Task Force was only concerned with Cathodic Protection of Bridge Decks, and that the goal was to accomplish the Task Force's mission within one year. After considerable discussion on a wide range of issues, subgroups were formed to address various aspects of the technology. Each Subgroup was asked to develop a list of critical items. The Subgroup topics and their membership were as follows:*

- *General Specifications - Rectifier, Cadwelds, Probes, etc.*
- *Specifications for Conductive Coke Asphalt (Modified)* ***(Hannah Shell, Vernon Dunlop, Don Jackson)***
- *Specifications for Non-overlays, Slotted CP System* ***(Gerry Clemena, Kevin Garrity, Jack Bennett)***
- *Specifications for Rigid Overlays CP Systems* ***(Dan Johnston, Jack Bennett, Ken Clear, James Thompson, Gerald Malashewski)***

- *Specifications for System Activation/Energization (Joe Rog, Don Jackson, Ken Clear)*

- *Specifications for Maintenance (Kevin Garrity, Joe Rog, Gerry Clemena)*

The followings were the Task Force activities to carry out its mission:

- *The Task Force met in 1987, to work on certain problem areas such as type of anodes and rectifiers to be included in the specification.*

- *At the January 1988 meeting in Washington, D. C., the Task Force attempted to bring the various Subgroups' topics -- slotted cathodic protection; rigid concrete overlay cathodic protection; coke breeze overlay cathodic protection; and rectifiers -- into a workable format for specification development.*

- *The Task Force convened in April 1988 to layout the format for the "Guide Specification on Cathodic Protection. "*

- *At their August 1988 meeting in Charlottesville, Virginia, the Task Force reviewed the first draft of the guide specification.*

- *At their January 1989 meeting in Washington, D. C., the Task Force reviewed the second draft of the guide specification for scope and content.*

- *A publication prospectus was prepared and submitted to the AASHTO AGC-ARTBA Joint Committee in August 1989 for permission to finalize the document for acceptance and printing. The publication prospectus was approved. The Joint Committee also approved the use of a mail ballot for soliciting approval of all guide specifications including subsequent permission to publish these specifications.*

- *A glossary was prepared for the specification document. Specifications for remote monitoring of the rectifier were incorporated into the guide specifications. Consideration was given to the inclusion of a new type of rectifier called the "switching rectifier, "developed in Canada. Most of the major technical decisions were completed.*

- *The Task Force addressed whether or not the Ferex 100 anode, which has developed some problems infield applications after several years of successful operation, should be included in the guide specifications.*

- *A meeting was held in December at the Virginia Transportation Research Council to discuss the rectifier to be included in the report specifications. Editing of the final report was started. It was also decided to dedicate the document to Mr. Richard Stratfull who dedicated most of his professional life to developing cathodic protection for reinforced concrete structures.*

- *In June 1992 the final draft was submitted to the secretary, Mr. Donald R. Jackson, for the final editing and distribution to Task Force members for their approval.*
- *The Task Force voted to accept their document and to forward it to the Subcommittee on New Highway Materials for their approval.*

- *Mr. Kenneth C. Clear resigned as Chairman of the Task Force. The Task Force's final report,* ***"Guide Specification for Cathodic Protection of Concrete Bridge Decks, "*** *was submitted for balloting in July 1994.*

- ***"Guide Specification for Cathodic Protection of Concrete Bridge Decks"*** *was approved for publication. The Subcommittee granted the Task Force's request to continue evaluation of emerging anode materials for inclusion in the guide specification.*

- *The Task Force 29 guide specification was submitted to and approved by the AASHTO Subcommittee on Construction in 1994.*

- *The Task Force met in August, 1996, to discuss inclusion of new anode materials in the guide specification and, based on long term data now available, to discuss the possibility of removing some anode materials from the guide specification.*

- *The Task Force met in September, 1997, and discussed the following items: (1) recognition by AASHTO of the guide specification previously developed by the Task Force, (2) inclusion of new anode material in the guide specification, and (3) status of previously approved anode material in updated guide specification.*

- *The following issues were discussed at the August 20-21, 1998 task force meeting: (1) removing obsolete anode materials from' the existing AASHTO Guide Specifications, (2) adding new and innovative anodes to the Guide Specifications for both bridge and substructures, (3) blending the two sets of AASHTO cathodic protection specifications developed under both SHRP and Task Force No. 29 into one document for assurance of continuity, (4) determining how to manage the cost of installing and monitoring cathodic protection systems on bridge decks and substructures, (5) assessing cathodic protection maintenance requirements.*

Task Force #29 met in Orlando, Florida during December 2 -3, 1999. Among the issues discussed at the meeting were adding new anodes materials to the approved list, long-term durability of various existing anodes, and new methods of evaluating existing cathodic systems.

With its mission accomplished, the Task Force was disbanded in September 2002.

Task Force 30

Concrete Resurfacings

Objective: *Development of guide procedures and specifications for practices, materials, and equipment used in concrete resurfacings.*

Action: *The Task Force created two subgroups: the Roads Subgroup and the Bridges Subgroup. The Roads Subgroup developed a publication entitled* ***"Guide Specifications for Concrete Overlays of Pavements".*** *It contained:*

- *Guide Specifications for Bonded Portland Cement Concrete Overlay*
- *Guide Specifications for Unbonded Portland Cement Concrete Overlay*
- *Guide Specifications for Portland Cement Concrete Overlay over Existing Asphalt Concrete Pavement (White topping)*

The Bridges Subgroup developed a publication entitled ***"Guide Specifications for Concrete Overlays of Bridge Decks."*** *Both publications were combined and approved by the Joint Committee at the 1990 meeting and later published by AASHTO under the title:* ***"Guide Specifications for Concrete Overlays of Pavements and Bridge Decks."*** *With its mission accomplished, the Task Force was dissolved.*

Task Force 31

Polymer Modified Asphalts

Objective: *Develop generic guide specifications for polymer modified asphalts.*

Action: *The initial Task Force meeting was held at TRB in January 1988. A subsequent meeting was held at RAPT during the first week of March 1988. As a result of these meetings, the Task Force decided to compile and review all of the*

existing specifications pertaining to polymer modified asphalt use.

The Task Force agreed to coordinate its activities with the recently organized ASTM's Subcommittee D04.45 on Modified Asphalt Specifications. The Subcommittee is charged with developing specifications for bitumens modified by the inclusion of polymers, crumb rubber, fibers, chemical modifiers, and other materials used in paving highways and airfields.

A meeting of the Task Force was held in June during the ASTM meetings in St. Louis, Missouri. A publication prospectus was prepared and submitted to the AASHTO-AGC-ARTBA Joint Committee for permission to finalize the document for acceptance and printing. The publication prospectus was approved. The Joint Committee also approved the use of a mail ballot for soliciting approval of all guide specifications including subsequent permission to publish these specifications.

The guide specifications were submitted to the AASHTO Subcommittee on Materials for comment at their August, 1990 meeting. Only minor comments were received.

The Joint Committee tentatively approved the Task Force's final report in August 1991 subject to review of additional comments received from the National Center for Asphalt Technology (NCAT).

The guide specifications were revised to address some changes relative to lowering the softening point requirements of the material. The revised guide specifications were submitted to the Joint Committee for publication in January 1992. They were printed as "Guide Specifications: Polymer Modified Asphalt."

The Task Force completed its mission of preparing the guide specifications and a "White Paper" on the use of Polymer Modified Asphalt. With its mission accomplished, the Task Force was dissolved in September 1992.

Task Force 32

Corrosion Protection of Concrete Structures

Objective: *Catalog and evaluate concrete corrosion protection systems and develop criteria, specifications and construction procedures that will improve the ability of concrete superstructure and substructure elements, excluding highway pavements, to withstand corrosive effects of chlorides from deicing chemicals or saltwater.*

Action: *Task Force meetings were held in San Diego, California in conjunction with the 1989 ACI Convention and in Cocoa Beach, Florida in conjunction with the 1990 AASHTO Bridge Subcommittee meeting.*

The Task Force issued a questionnaire to all AASHTO Bridge Committee members asking for their current practices on corrosion control and an assessment of the effectiveness of their strategies. Thirty-nine bridge owners from the United States and Canada responded.

The Task Force met in Denver, Colorado on March 10, 1991 to discuss the first draft of the report. A revised format for each chapter was agreed upon and a deadline was established.

The Task Force met again in San Francisco, California in conjunction with the annual AASHTO Bridge Subcommittee meeting to discuss progress on the 2nd draft. Due to individual workloads, progress was less than anticipated. A target of completing the manual by the end of calendar year 1991 was established.

The Task Force met in St. Louis, on September 20, 1991, in conjunction with the AASHTO Bridge Subcommittee meeting (to discuss LRFD specification) to discuss comments on the final draft.

The Task Force 32 final report entitled ***"Manual for Corrosion Protection of Concrete Components in Bridges"*** *was submitted for review in March 1992 and approved by mail ballot in June 1992 from AASHTO, ARTBA, and AGC. The Report was published in November 1992. With its mission accomplished, the Task Force was dissolved in November 1992.*

Task Force 33

Reflective Signing and Striping

Objective: *To develop guide specifications for new materials used for both temporary and permanent retro reflective traffic control devices.*

Action: *Due to increasingly scarce resources and in order to eliminate redundant or parallel efforts, the Task Force was dissolved.*

Task Force 34

Polymer Concrete Overlays of Bridge Decks

Objective: *To develop guide specifications and procedures for the design and construction of polymer concrete bridge deck overlays.*

Action: *The Task Force held its initial meeting in January 1992. The format of the guide specification was developed and included the areas of multiple layer polymer overlays, slurry polymer overlays, and premixed polymer overlays. The Task Force was subdivided into four subgroups to facilitate the writing of the document.*

The Task Force approved the fifth draft of its guide specification and the final report was distributed to the Joint Committee for balloting in 1995. The final report, ***"Guide Specifications for Polymer Concrete Bridge Deck Overlays,"*** *was approved for publication by the Joint Committee members and forwarded to AASHTO for publication. With its mission accomplished, the Task Force was disbanded.*

Task Force 35

Joint Sealants

In-Place Performance and Test Procedures

Objective: *To determine performance criteria for in place sealants in PCC joints and cracks, and develop procedures to evaluate their in place performance that might be used for acceptance testing.*

Action: *Due to increasingly scarce resources and in order to eliminate redundant or parallel efforts, the Task Force was dissolved.*

Task Force 36

Use of Fibers in Portland Cement Concrete

Objective: *The main goal is to develop a guide specification for the State Highway Agencies on the use of Fiber Reinforced Concrete (FRC). The guide provides information on the properties of FRC, proportioning, mixing, placing, and finishing FRC. It also provides examples of recent uses in pavements, bridges, and overlays, and future considerations and implementation needs.*

Action: *The publication titled* ***"The Use and State-of-the Practice for Fiber Reinforced Concrete"*** *became available in October 2001 from AASHTO. Prices for the publication are $26.00 for member and $31.00 for non-member. With its mission accomplished, the Task Force was disbanded in August 2001.*

Task Force 37

Shotcrete for Bridge Rehabilitation

Objective: *Develop a guide specification for the use of shotcrete in the rehabilitation of bridges. The work included the use of microsilica and polypropylene fibers.*

Action: *The final report was published in January 2000. This concludes the work originally commissioned for Task Force 37. The Task Force was officially disbanded in February 2000.*

Task Force 38

Cold-In-Place Recycled Asphalt Pavements

Objective: *Develop analysis criteria to aid in the evaluation of aged asphalt pavement and its potential to be rehabilitated via cold recycle method. Included with this will be guide specifications, construction methods and testing procedures for cold recycling of asphalt pavement.*

Action: *The final report was completed and published in March 1998. This concludes the work originally commissioned for Task Force 38. The Task Force was disbanded in August 1998.*

Task Force 39

Development Of Specifications For Flowable Fills

Objective: *To develop guide specifications for materials, mix design, and construction of flowable fills for a variety of applications.*

Action: *The Task Force finalized membership and held meetings in January 1997 in conjunction with TRB and on June 19, 1997 in St. Louis.*

The Task Force has not had any activity in the past four years and was disbanded in September 2002.

Task Force 40

Hot In Place Recycled Asphalt Pavements

Objective: *Development of analysis criteria for evaluation of the potential for an asphalt pavement to be rehabilitated via hot in place recycling and development of guide specifications for materials, construction, and quality control/quality assurance of hot in place recycled asphalt pavement.*

Action: *It was determined that the need no long exist, this Task Force was disbanded in August 2001.*

Task Force 41

High Range Water Reducer Use in Concrete

Objective: *To develop guide specifications for high range water reducer in concrete*

Action: *The continuing need to develop guide specifications in this technology area has been overcome by events in terms of current practices in the industry. The need no longer existed which contributed to the difficulty inputting together the task force membership. Hence, the Task Force was disbanded in August 1999.*

Task Force 42

Thermoplastic Pipe Use In Highway Applications

Objective: *To develop guide specifications for installation of thermoplastic pipe used in highway applications.*

Action: *It was determined that the need no long exist, this Task Force was disbanded in August 2001.*

Task Force 43

Full Depth Cold-In Place Flexible Pavement

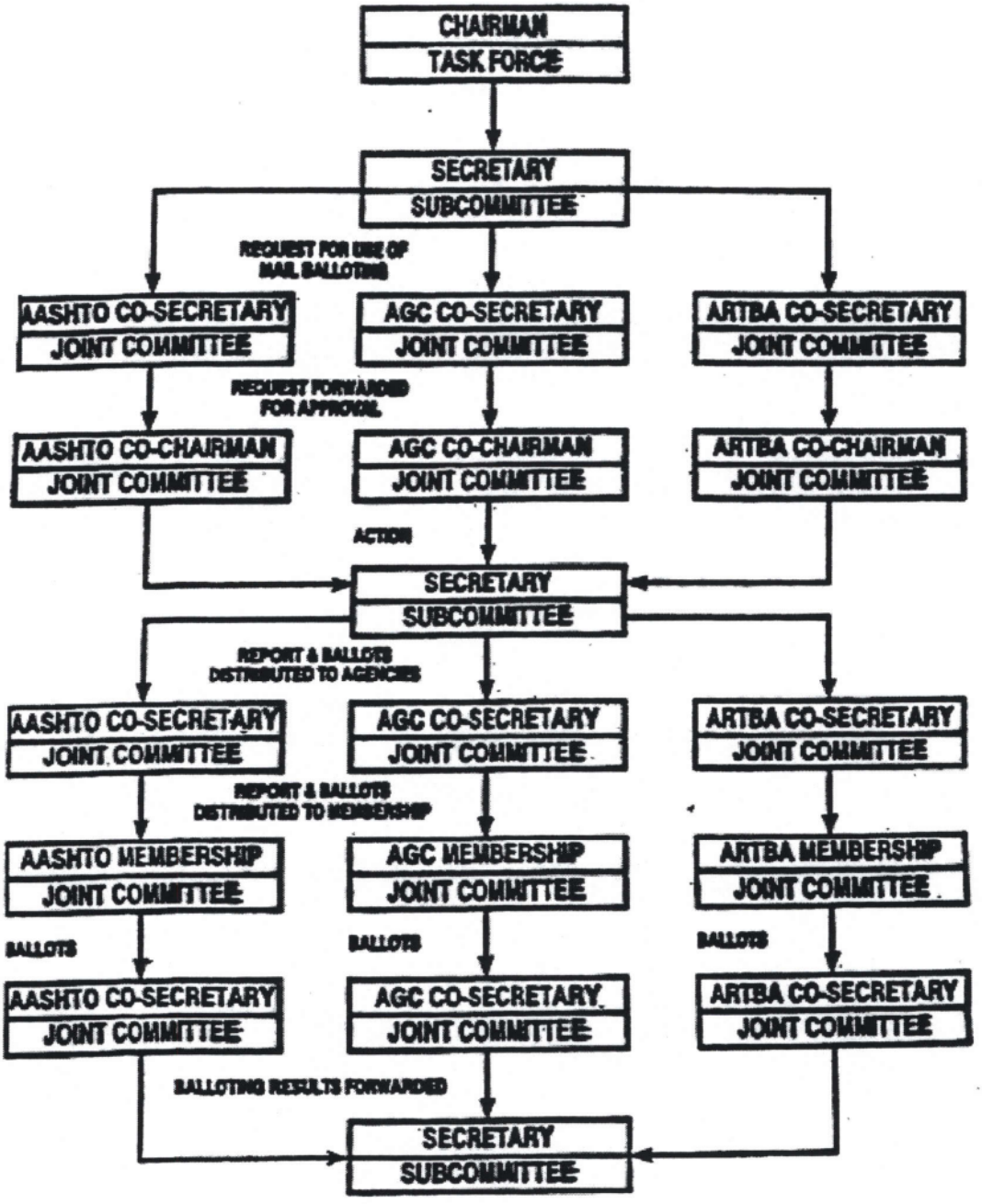
Objective: *To develop guide specifications for cold in place full depth flexible pavement reclamation.*

Action: *Due to the unavailability of new members, this Task Force was disbanded in August 2000.*

APPENDICES

Appendix A

APPROVAL OF TASK FORCE REPORTS BY MAIL BALLOT



Appendix B

AASHTO-AGC-ARTBA Task Force Publications

Generally, the Joint Committee will only publish such documents that are of significant value to the highway industry, containing information not readily available elsewhere; that are prepared by recognized authorities representative of AASHTO, AGC, and ARTBA; and that are developed through the Joint Committee procedures regarding development, approval and publishing of Subcommittee or Task Force publications. If the Subcommittee or Task Force, as a result of its investigation of a subject, decides that a publication of its findings would be desirable, it submits a prospectus to the co-chairmen of the Joint Committee for review and comment. Once the prospectus is approved, the Subcommittee or Task Force produces a recommended draft publication that is then considered by the Joint Committee. Upon approval of two-thirds of the members of the Joint Committee, the recommended draft publication is then referred to the appropriate governing bodies of AASHTO, AGC, and ARTBA for their concurrence in publication.

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